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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/711,138 | 11/14/2000 | Yasushi Iida | 063993/0108 | 7019 |

7590 08/19/2002

Foley & Lardner
Washington Harbour
Suite 500
3000 K Street N W
Washington, DC 20007-5109

EXAMINER

CASTELLANO, STEPHEN J

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 3727 | |

DATE MAILED: 08/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

S.M.

| | | |
|------------------------------|-----------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/711,138 | IIDA ET AL. |
| | Examiner Stephen J. Castellano | Art Unit 3727 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

4) Claim(s) 1-13,24,25,29-31,34-36 and 40-57 is/are pending in the application.

4a) Of the above claim(s) 3,4,10-13,24,25,29-31,36 and 41-57 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,2,5-9,34,35 and 40 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

Claims 41-57 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected specie, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 5.

In addition, the examiner can't find support in Fig. 34 for the laminated inner shell of claims 3 and 4, the laminated outer shell of claims 10-13, 24, 25 and 29-31 or the steps o the shoulder portion of the inner shell of claim 36. Therefore, claims 3, 4, 10-13, 24, 25, 29-31 and 36 will be withdrawn from further consideration.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 5-9, 34, 35 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it uses "FRP" to designate a fiber reinforced plastic.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 5, 6 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Hlebovy.

Fiber reinforced plastics having reinforcing fibers and made by conventional filament winding techniques inherently have strength of a magnitude of 35 GPa or more in tensile modulus and 1.5% to 2.0% or more in tensile breaking strain.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, 6 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hlebovy.

Hlebovy discloses the invention except for the tensile modulus and tensile breaking strain limitations. Official notice is taken that fiber reinforced plastics of 35 GPa or more tensile modulus and 2.0% or more tensile breaking strain are well known. It would have been obvious to modify the fiber reinforced plastic outer shell to include a fiber reinforced plastic of 35 GPa or more tensile modulus and 2.0% or more tensile breaking strain in order to provide a stronger outer shell which will resist bursting or rupture due to high internal pressures within the vessel.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hlebovy in view of Tamura et al. (Tamura).

Hlebovy discloses the invention except for specifying that the fibers in the outer layer are carbon. Tamura teaches carbon fibers for reinforcing plastic. Carbon fibers yarns of 4.5-5.5 GPa or more in strand tensile strength and 2.0% or more in strand tensile breaking strain are inherent. Carbon fiber yarns of 0.30 or less in oxygen ratio at surface and 0.02 or more in nitrogen at surface are inherent.

Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hlebovy in view of Forsman.

Hlebovy discloses the invention except for the innermost layer of the shoulder portion of the outer shell comprises a layer with hoop-wound reinforcing fibers in a filament winding. Forsman teaches innermost layer 20a and 20b of the shoulder portion of the outer shell comprises a layer with hoop-wound reinforcing fibers in a filament winding. It would have been obvious to provide the outer shell with an inner layer of hoop-wound reinforcing fibers in a filament winding in order to increase the hoop strength at the cylindrical wall to domed or end wall transition of the pressure vessel to avoid a rupture at the cylindrical wall to end wall juncture.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Castellano whose telephone number is 703-308-1035. The examiner can normally be reached on M-Th 6:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lee W. Young can be reached on 703-308-2572. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

S. Castellano
Stephen J. Castellano
Primary Examiner
Art Unit 3727

sjc
August 15, 2002